

CLAIM AMENDMENTS

1. (previously presented) A process for lubricating a sump lubricated, compression ignited internal combustion engine, comprising supplying thereto a low-sulfur, low-phosphorus lubricant comprising:

(a) an oil of lubricating viscosity;

(b) a substantially nitrogen-free sulfurized olefin antiwear agent in an amount sufficient to provide improved antiwear performance to the composition; and

(c) about 1 to about 10 percent by weight of a nitrogen-containing dispersant; said lubricant formulation containing less than about 0.1 percent by weight phosphorus, less than about 0.4 percent by weight sulfur, and having 0.8% to less than about 1.2% sulfated ash.

2. (original) The process of claim 1 wherein the lubricant further comprises an overbased detergent.

3. (original) The process of claim 2 wherein the overbased detergent is selected from the group consisting of salixarates, saligenins, salicylates, glyoxylates, and mixtures thereof.

4. (original) The process of claim 1 wherein the engine is a heavy-duty diesel engine.

5. (previously presented) A low-sulfur, low-phosphorus composition suitable for lubricating a compression ignited internal combustion engine, comprising:

(a) an oil of lubricating viscosity;

(b) a substantially nitrogen-free sulfurized olefin antiwear agent, in an amount sufficient to provide improved antiwear performance to the composition;

(c) about 1 to about 10 percent by weight of a nitrogen-containing dispersant; and

(d) an overbased detergent selected from the group consisting of salixarates, saligenins, salicylates, glyoxylates, and mixtures thereof;

said composition containing less than about 0.1 percent by weight phosphorus, less than about 0.4 percent by weight sulfur, and having 0.8% to less than about 1.2% sulfated ash.

6. (original) The composition of claim 5 wherein the sulfurized olefin antiwear agent is selected from the group consisting of sulfurized C₄ to C₄₀ olefins, sulfurized

vegetable oils, sulfurized lard oil, sulfurized cyclohexene compounds bearing ester substituents, and mixtures thereof.

7. (original) The composition of claim 5 wherein the nitrogen-containing dispersant comprises a succinimide dispersant.

8. (original) The composition of claim 5 further comprising a zinc dialkyldithiophosphate, wherein the amount of zinc dialkyldithiophosphate is about 0.2 to about 1.2 percent by weight.

9. (previously presented) The composition of claim 8 wherein the alkyl groups of the zinc dialkyldithiophosphate are at least about 50% secondary alkyl groups.

10. (original) The composition of claim 5 further comprising about 0.2 to about 6 percent by weight of an aromatic amine antioxidant or a hindered phenol antioxidant or a mixture thereof.

11. (original) The composition of claim 10 wherein the antioxidant comprises a hindered ester-substituted phenol antioxidant.

12. (original) The composition of claim 5 wherein the amount of component (b) is about 0.05 to about 1.5 percent by weight.

13. (original) The composition of claim 5 wherein the amount of component (d) is about 0.1 to about 3 weight percent.

14. (original) The composition of claim 5 wherein the composition contains less than about 0.06 percent by weight phosphorus.

15. (original) The composition prepared by combining the components of claim 1.

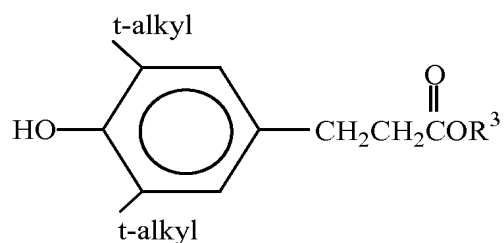
16. (canceled)

17. (canceled)

18. (previously presented) The process of claim 1 wherein the lubricant formulation has less than 0.09 percent by weight phosphorus.

19. (canceled)

20 (previously presented) The composition of claim 11 wherein the hindered ester-substituted phenol antioxidant is represented by the structure



wherein R³ is a straight chain or branched chain alkyl group containing 2 to 22 carbon atoms.

21. (new) The process of claim 1 wherein the amount of sulfurized olefin (b) is about 0.05 to about 1.5 weight percent and the amount of the dispersant (c) is about 2.5 to about 8 weight percent.

22. (new) The composition of claim 5 wherein the amount of sulfurized olefin (b) is about 0.05 to about 1.5 weight percent, the amount of the dispersant (c) is about 2.5 to about 8 weight percent, and the amount of the overbased detergent (d) is about 0.1 to about 3 weight percent.